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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,698	06/23/2003	Masakazu Okuda	053588-5012	5737
9629	7590	01/21/2005	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			MOUTTET, BLAISE L	
			ART UNIT	PAPER NUMBER
			2853	

DATE MAILED: 01/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/600,698	Applicant(s) OKUDA ET AL.	
	Examiner Blaise L Mouttet	Art Unit 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-21 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4 and 8-17 is/are allowed.
- 6) ☒ Claim(s) 18-21 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The amendment to the abstract of December 15, 2004 is acknowledged.

Claim Objections

2. The prior claim objection has been overcome by the amendment of December 15, 2004.

Claims 6 and 7 are newly objected to because they depend from a cancelled claim. For purposes of examination under 35 USC 102 and 35 USC 103 claim 6 will be interpreted to depend from claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuchii et al. EP 1 186 414 A2.

Tsuchii et al. discloses, regarding claim 18, a liquid drop discharging device comprising:

a liquid drop discharging head scanned by a main scanning mechanism (104) in a main scan direction (figure 36);

the liquid drop discharging head (figures 1A-1C) comprising ejector units arranged along the main scanning direction (printing direction of figures 1A and 1B), wherein:

each ejector unit includes a first ejector group (shown on the following page) arranged at one side in the main scanning direction and a second ejector group (shown on the following page) arranged at another side in the main scanning direction;

each ejector group includes a plurality of ejectors (51) (page 25, lines 25-30);

all of the ejectors are arranged two dimensionally in a predetermined plane (figure 1B);

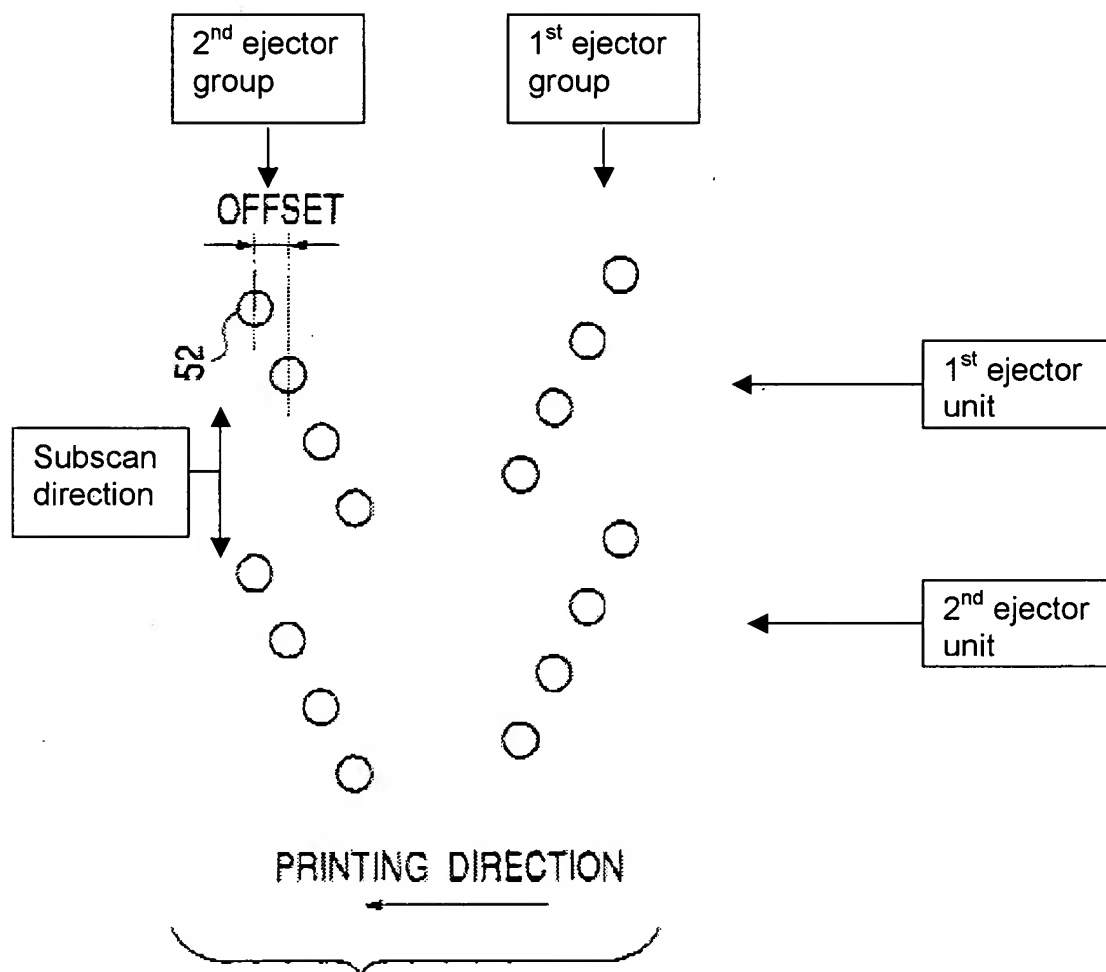
each ejector includes a nozzle (52) (page 25, lines 31-36);

all of the nozzles are offset from each other in a sub-scanning direction which is perpendicular to the main scan direction (as evident from figures 1A and 1B); and

the nozzles of each ejector group are alternately arranged so that when they are viewed in the main scanning direction, a nozzle of one ejector of the first ejector group, a nozzle of one ejector of the second ejector group, a nozzle of another ejector of the first ejector group, a nozzle of another ejector of the second ejector group, etc. are arranged in such an order in the sub-scanning direction (as shown in figure 1B nozzles are arranged in the sub-scan direction such that the uppermost nozzle of the 1st group

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(right side group) is arranged, followed by the uppermost nozzle of the 2nd group (left side group), followed by the second uppermost nozzle of the 1st group, followed by the second uppermost nozzle the 2nd group, etc.)



Regarding claim 19, a sub-scan mechanism (134) moves the object (108) and the head in the sub-scan direction (figure 36, page 12, lines 7-24).

4. Claims 18-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Chang US 6,471,317.

Chang discloses, regarding claim 18, a liquid drop discharge device comprising:
a liquid drop discharging head (22) with a main scanning mechanism for relatively moving the head and an object that the head applies liquid drops (figure 1, column 6, lines 9-12);

the liquid drop discharging head (22) comprising an ejector unit arranged along a main scanning direction (figure 2), wherein:

the ejector unit includes a first ejector group (1) arranged at one side in the main scanning direction and a second ejector group (2) arranged at another side in the main scanning direction (figure 2, column 6, lines 17-23),

each ejector group includes a plurality of ejectors (1p, 2p) (column 6, lines 60-65),

all of the ejectors are arranged two dimensionally in a predetermined plane (figure 2),

each ejector (1p,2p) includes a nozzle (1a,2a) (column 6, lines 60-65);

all of the nozzles are offset from each other in a sub-scanning direction which is perpendicular to the main scan direction (as shown in figure 2 and described in column 8, lines 41-49),

the nozzles of each ejector group are alternately arranged so that when they are viewed in the main scanning direction, a nozzle of one ejector of the first ejector group,

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a nozzle of one ejector of the second ejector group, a nozzle of another ejector of the first ejector group, a nozzle of another ejector of the second ejector group, etc. are arranged in such an order in the sub-scanning direction (as shown in figure 2 nozzles are arranged in the sub-scan direction such that the uppermost left nozzle of group 1a is arranged, followed by the uppermost left nozzle of group 2a, followed by the uppermost right nozzle of group 1a, followed by the uppermost right nozzle of group 2a, etc.)

Regarding claim 19, a sub-scan mechanism moves the object and the head in the sub-scan direction (column 6, lines 13-16).

Regarding claim 20, the ejectors are piezoelectric actuators (column 6, lines 60-65).

Chang discloses, regarding claim 21, a liquid drop discharging head (figure 11) comprising a plurality of ejector units arranged along a main scanning direction (one ejector unit for the respective color inks), wherein:

each ejector unit includes a first ejector group (1) arranged at one side in the main scanning direction and a second ejector group (2) arranged at another side in the main scanning direction (figure 2, column 6, lines 17-23);

each ejector group includes a plurality of ejectors (1p, 2p) (column 6, lines 60-65);

all of the ejectors are arranged two dimensionally in a predetermined plane (figure 2);

each ejector group is formed by ejectors arranged two dimensionally in a predetermined plane (figure 2);

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each ejector (1p,2p) includes a nozzle (1a,2a) (column 6, lines 60-65);

the nozzles of each ejector group are alternately arranged so that when they are viewed in the main scanning direction, a nozzle of one ejector of the first ejector group, a nozzle of one ejector of the second ejector group, and rotates this order in the sub-scanning direction (as shown in figure 2 nozzles are arranged in the sub-scan direction such that the uppermost left nozzle of group 1a is arranged, followed by the uppermost left nozzle of group 2a, followed by the uppermost right nozzle of group 1a, followed by the uppermost right nozzle of group 2a, etc.);

a first imaginary line connecting the ejectors of the first ejector group is inclined at a first angle with respect to the sub-scanning direction (see figure 2 on the following page);

a second imaginary line connecting the ejectors of the second ejector group is inclined at a second angle with respect to the sub-scanning direction (see figure 2 on the following page);

said first and second angle are substantially the same (see figure 2 on the following page).

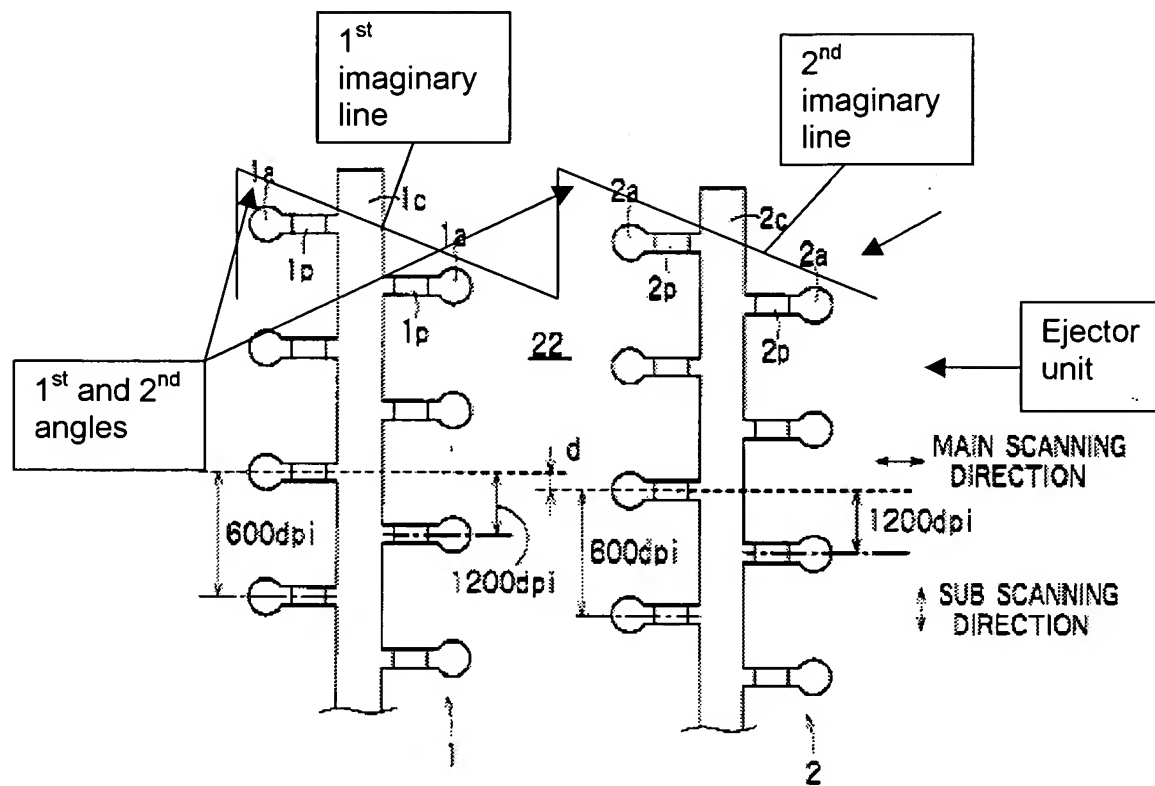


FIG. 2

Allowable Subject Matter

5. Claims 1-4 and 8-17 are allowable as amended December 15, 2004. Applicant's arguments to these amended claims filed December 15, 2004 were persuasive.

Response to Arguments

6. Applicant's arguments filed December 15, 2004 have been fully considered but they are not persuasive as to the allowability of the rejected claims.

Applicant seems to argue that the limitation to all of the ejectors arranged two dimensionally in a predetermined plane is not shown by the applied art. The examiner

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disagrees. All a "two dimensional arrangement in a predetermined plane" seems to call for is a positioning of the ejectors so that they are offset in both of a vertical (1st dimension) and a horizontal (2nd dimension) direction from other ejectors. The applied art clearly shows this for all of the ejectors.

New claim 21 has necessitated a new rejection for this claim.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Contact Information

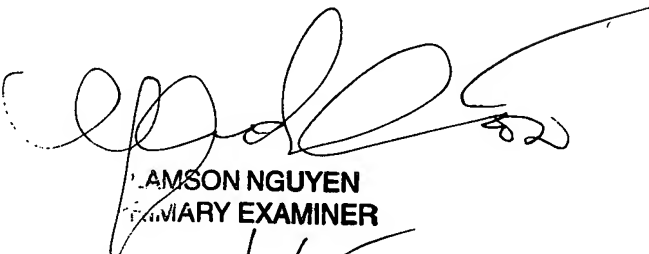
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Blaise Mouttet who may be reached at telephone number (571) 272-2150. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier, Art Unit 2853, can be reached at (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Blaise Mouttet January 12, 2005

Blaise Mouttet 1/12/2005


LAMSON NGUYEN
EXAMINER
01/18/05